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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,396	07/22/2003	Ashish Agarwal	5760-12100	6815

35690 7590 12/27/2006  
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.  
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AUSTIN, TX 78701

EXAMINER
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SORRELL, ERON J

ART UNIT	PAPER NUMBER
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2182

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/624,396

Applicant(s)

AGARWAL ET AL.

Examiner

Eron J. Sorrell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4,6-10,12,14-18 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-10,12,14-18, and 20-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

DETAILED ACTION

*Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,2,4,6-10,12,14-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Midgley et al. (U.S. Patent No. 6,625,623 hereinafter "Midgley") in view of Rubin et al. (U.S. Patent No. 5,680,573 hereinafter "Rubin").

3. Referring to system claim 1, method claim 9, and computer storage medium claim 17, Midgley teaches a computing system comprising:

an application configured to initiate write transactions (see lines 22-40 of column 16);

a first storage device configured to store data corresponding to said write transactions (see lines 22-40 of column 16); and

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a replicator component (see lines 10-52 of column 19) configured to:

monitor said write transactions (see lines 10-52 of column 19); and

automatically modify system resources in response to I/O characteristics of said monitored write transactions (see lines 10-52 of column 19, note the I/O characteristics is being construed as the number of write transaction, Midgley teaches thousands can occur).

wherein application, first storage device, and replicator are within a first node of said system (see figure 1 and lines 23-40 of column 16), and wherein said system includes a second node with a second storage device coupled to said first node (see figure 1 and lines 54-63 of column 16, note in the system of Midgley items 24,28, servers 18,20, and 22, and storage devices 32,34,38 are all within a local node, and server 10, and storage 14 and 16 are all within a remote node) wherein said replicator component is further configured to convey said write transactions to said second node (see lines 54-63 of column 16).

Midgley is silent on the system comprising a memory pool and the replicator being configured to allocate buffers from the memory pool for the write transactions and modifying the size of the memory pool in response to the I/O characteristics.

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Rubin teaches, in an analogous system, the above limitations (see line 60 of column 8 to line 11 of column 9).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system of Midgley with the above teachings of Rubin. One of ordinary skill in the art would have been motivated to make such modification in order to more efficiently manage the memory in the system as suggested by Rubin (see paragraph bridging columns 2 and 3).

4. Referring to system claim 2, method claim 10, and storage medium claim 18, Midgley the replicator is further configured to record data indicative of said characteristics (see paragraph bridging columns 7 and 8).

5. Referring to system claim 4 and method claim 12, Midgley teaches the system further comprises a log volume, and wherein the replicator is further configured to store the write transactions in the log volume (see lines 4-37 of column 17, wherein Midgley discloses a "journal file").

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6. Referring to system claim 6, method claim 14, and storage medium claim 20, Midgley fails to teach the second node includes a pool of buffers, each of which is configured to store a write transaction received from the first node, and wherein said replicator component is further configured to modify a size of said pool of buffers in said second node in response to said characteristics, however Midgley does teach the use of buffers for transfer data in the write transaction (see line 25-52 of column 9).

Rubin teaches, in an analogous system, the above limitations (see paragraph bridging columns 8 and 9)

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the system of Midgley with the above teachings of Rubin. One of ordinary skill in the art would have been motivated to make such modification in order to more efficiently manage the memory in the system as suggested by Rubin (see paragraph bridging columns 2 and 3).

7. Referring to system claim 7 and method claim 15, Midgley teaches, the replicator is further configured to:

provide the recorded characteristics for display (see lines 25-65 of column 19);

provide guidelines to a user for modifying resources of said system (see lines 25-65 of column 19); and

modify said resources based upon user input (see lines 25-65 of column 19).

8. Referring to system claim 8 and method claim 16, Midgley teaches the replicator component is configured to access the recorded data responsive to detecting an event (see paragraph bridging columns 7 and 8, note the recorded data is accessed when the journal file is transmitted to the backup server).

9. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Midgley in view of Rubin as applied to claims 1, 9, and 17 above, and further in view of Mashayekhi et al. (U.S. Patent No. 6,922,791 hereinafter "Mashayekhi").

10. Referring to claims 21-23, the combination of Midgley and Rubin fails to teach the second node is configured to server as a failover node if the first node fails.

Mashayekhi teaches, in an analogous system, the above limitation (see lines 25-29 of column 6).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the

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combination of Midgley and Rubin with the above teachings of Mashayekhi to provide the advantage of increase availability of system resources and minimizing downtime as suggested by Mashayekhi (see lines 19-26 of column 1).

*Response to Arguments*

11. Applicant's arguments filed 10/2/06 have been fully considered but they are not persuasive. The applicant argues in essence that Midgley fails to teach the limitation of the application, the first storage device, and replicator are not within a node in the system (see pages 6 and 7 of applicant's remarks).

12. As per argument 1, the Examiner disagrees. It appears as if the applicant is trying to argue that the claimed node is a single device on a network. While this is the plain ordinary meaning of the term "node," the applicant has set forth preferred embodiments of the invention wherein a node comprises many connected devices. For example, applicant's specification page 6, line 8-10 reads, "For example *cluster 120 may represent a local node* and node 102c may represent a remote node... (emphasis added). From figure 1, it is clear to one of ordinary skill in the art that cluster 120 is more than a single device.



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In this instance in light of the applicant's own specification, the term "node" given its broadest reasonable interpretation may include more than one device, thus the Examiners interpretation of a node is consistent with the applicants described preferred embodiment. In the system of Midgley items 24,28, servers 18,20, and 22, and storage devices 32,34,38 are all within a local node, and server 10, and storage 14 and 16 are all within a remote node. Midgley further discloses the replicator can be within any of the servers 18-22.

#### *Conclusion*

13. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J. Sorrell whose telephone number is 571 272-4160. The examiner can normally be reached on Monday-Friday 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
KIM HUYNH  
SUPERVISORY PATENT EXAMINER

12/4/06